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     (FILE 'HOME' ENTERED AT 11:16:30 ON 15 MAY 2003)

     INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI,
     BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA,
     CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB,
     DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...' ENTERED AT 11:16:42 ON
     15 MAY 2003
               SEA (BETA 1,3-GALACTOSYLTRANSFERASE)
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                3   FILE AGRICOLA
                2   FILE AQUASCI
               76   FILE BIOSIS
               45   FILE BIOTECHNO
               11   FILE CABA
               27   FILE CANCERLIT
              106   FILE CAPLUS
                1   FILE CIN
                2   FILE CONFSCI
                3   FILE EMBAL
               58   FILE EMBASE
               39   FILE ESBIOBASE
                3   FILE FSTA
              181   FILE GENBANK
               15   FILE IFIPAT
                4   FILE JICST-EPLUS
               24   FILE LIFESCI
               63   FILE MEDLINE
                2   FILE PASCAL
               62   FILE SCISEARCH
               26   FILE TOXCENTER
              112   FILE USPATFULL
                2   FILE USPAT2
               11   FILE WPIDS
               11   FILE WPINDEX
L1               QUE (BETA 1,3-GALACTOSYLTRANSFERASE)
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     FILE 'USPATFULL, CAPLUS, BIOSIS, MEDLINE, SCISEARCH, EMBASE, BIOTECHNO,
     ESBIOBASE, CANCERLIT' ENTERED AT 11:19:47 ON 15 MAY 2003
L2           124 S L1 AND (SIALYL-LEWIS OR COLON CANCER)
L3            97 S L2 AND (CDNA OR CLONE OR VARIANT OR MUTANT)
L4            83 DUP REM L3 (14 DUPLICATES REMOVED)
L5            97 S L2 AND (CDNA OR CLONE)
L6             5 S L4 AND PY<1999
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L4 ANSWER 73 OF 83 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 1
ACCESSION NUMBER: 2001:111127 CAPLUS
DOCUMENT NUMBER: 134:293659
TITLE: **.beta.1,3-Galactosyltransferase** .beta.3Gal-T5 acts on the GlcNAc.beta.1.fwdarw.3Gal.beta.1.fwdarw.4GlcNAc.beta.1.fwdarw.R sugar chains of carcinoembryonic antigen and other N-linked glycoproteins and is down-regulated in colon adenocarcinomas
AUTHOR(S): Salvini, Roberta; Bardoni, Anna; Valli, Maurizia; Trinchera, Marco
CORPORATE SOURCE: Department of Biochemistry, University of Pavia, Pavia, 27100, Italy
SOURCE: Journal of Biological Chemistry (2001), 276(5), 3564-3573
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors attempted to det. whether **.beta.1,3-galactosyltransferase** .beta.3Gal-T5 is involved in the biosynthesis of a specific subset of type 1 chain carbohydrates and expressed in a cancer-assocd. manner. The authors transfected Chinese hamster ovary (CHO) cells expressing Fuc-TIII with .beta.3Gal-T **cDNAs** and studied the relevant glycoconjugates formed. .beta.3Gal-T5 directs synthesis of Lewis type 1 antigens in CHO cells more efficiently than .beta.3Gal-T1, whereas .beta.3Gal-T2, -T3, and -T4 are almost unable to direct synthesis. In the **clone** expressing Fuc-TIII and .beta.3Gal-T5 (CHO-FT-T5), **sialyl-Lewis** a synthesis is strongly inhibited by swainsonine but not by benzyl-.alpha.-GalNAc, and **sialyl-Lewis** x is absent, although it is detected in the **clones** expressing Fuc-TIII and .beta.3Gal-T1 (CHO-FT-T1) or Fuc-TIII and .beta.3Gal-T2 (CHO-FT-T2). Endo-.beta.-galactosidase treatment of N-glycans prepd. from **clone** CHO-FT-T5 releases (.+-.NeuAc.alpha.2.fwdarw.3)Gal.beta.1.fwdarw.3[Fuc.alpha.1.fwdarw.4]GlcNAc.beta.1.fwdarw.3Gal but not GlcNAc.beta.1.fwdarw.3Gal or type 2 chain oligosaccharides, which are found in CHO-FT-T1 cells. This result indicates that .beta.3Gal-T5 expression prevents poly-N-acetyllactosamine and **sialyl-Lewis** x synthesis on N-glycans. Kinetic studies confirm that .beta.3Gal-T5 prefers acceptors having the GlcNAc.beta.1.fwdarw.3Gal end, including lactotriosylceramide. Competitive reverse transcriptase mediated-polymerase chain reaction shows that the .beta.3Gal-T5 transcript is expressed in normal colon mucosa but not or poorly in adenocarcinomas. Moreover, recombinant carcinoembryonic antigen purified from a CHO **clone** expressing Fuc-TIII and .beta.3Gal-T5 reacts with anti-**sialyl-Lewis** a and carries type 1 chains on oligosaccharides released by endo-.beta.-galactosidase. The authors conclude that .beta.3Gal-T5 down-regulation plays a relevant role in detg. the cancer-assocd. glycosylation pattern of N-glycans.
REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 74 OF 83 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 2001:144577 SCISEARCH
THE GENUINE ARTICLE: 398YW
TITLE: Identification and characterization of three novel beta 1,3-N-acetylglucosaminyltransferases structurally related to the **beta 1,3-galactosyltransferase** family
AUTHOR: Shiraishi N; Natsume A; Togayachi A; Endo T; Akashima T; Yamada Y; Imai N; Nakagawa S; Koizumi S; Sekine S; Narimatsu H; Sasaki K (Reprint)

CORPORATE SOURCE: Kyowa Hakko Kogyo Co Ltd, Tokyo Res Labs, 3-6-6 Asahi Machi, Machida, Tokyo 1948533, Japan (Reprint); Kyowa Hakko Kogyo Co Ltd, Tokyo Res Labs, Machida, Tokyo 1948533, Japan; Soka Univ, Inst Life Sci, Div Cell Biol, Hachioji, Tokyo 1928577, Japan; Univ Tokyo, Grad Sch Pharmaceut Sci, Lab Canc Biol & Mol Immunol, Bunkyo Ku, Tokyo 113, Japan; Tokyo Univ Agr, Fac Bioind, Lab Anim Resources, Abashiri, Hokkaido 0992422, Japan
COUNTRY OF AUTHOR: Japan
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (2 FEB 2001) Vol. 276, No. 5, pp. 3498-3507.
Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814 USA.
ISSN: 0021-9258.
DOCUMENT TYPE: General Review; Journal
LANGUAGE: English
REFERENCE COUNT: 105

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB We have isolated three types of **cDNAs** encoding novel beta1,3-N-acetylglucosaminyltransferases (designated beta 3Gn-T2, -T3, and -T4) from human gastric mucosa and the neuroblastoma cell Line SK-N-MC, These enzymes are predicted to be type 2 transmembrane proteins of 397, 372, and 378 amino acids, respectively, They share motifs conserved among members of the beta1,3-galactosyltransferase family and a beta1,3-N-acetylglucosaminyltransferase (designated beta 3Gn-T1), but show no structural similarity to another type of pl,3-N-acetylglucosaminyltransferase (iGnT). Each of the enzymes expressed by insect cells as a secreted protein fused to the FLAG peptide showed beta1,3N-acetylglucosaminyltransferase activity for type 2 oligosaccharides but not pl,3-galactosyltransferase activity. These enzymes exhibited different substrate specificity. Transfection of Namalwa KJM-1 cells with beta 3Gn-T2, -T3, or -T4 **cDNA** led to an increase in poly-N-acetyllactosamines recognized by an anti-i-antigen antibody or specific lectins, The expression profiles of these beta 3Gn-Ts were different among 35 human tissues, beta 3Gn-T2 was ubiquitously expressed, whereas expression of beta 3Gn-T3 and -T4 was relatively restricted. beta 3Gn-T3 was expressed in colon, jejunum, stomach, esophagus, placenta, and trachea beta 3Gn-T4 was mainly expressed in brain. These results have revealed that several beta1,3-N-acetylglucosaminyltransferases form a family with structural similarity to the pl,3-galactosyltransferase family. Considering the differences in substrate specificity and distribution, each pl,3-N-acetylglucosaminyltransferase may play different roles,

L4 ANSWER 75 OF 83 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2000:608915 CAPLUS
DOCUMENT NUMBER: 133:189872
TITLE: Novel human UDP-galactose:.beta.-N-acetylglucosamine .**beta.1,3-galactosyltransferase** (.beta.3Gal-T5) responsible for synthesis of type 1 chain in colorectal tumor cells
INVENTOR(S): Narimatsu, Hisashi; Isshiki, Soichiro; Togayachi, Akira; Sasaki, Katsutoshi
PATENT ASSIGNEE(S): Kyowa Hakko Kogyo Co., Ltd., Japan
SOURCE: PCT Int. Appl., 123 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 2000050608 A1 20000831 WO 2000-JP1070 20000224
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
JP 2000245464 A2 20000912 JP 1999-47571 19990225
EP 1162269 A1 20011212 EP 2000-905320 20000224
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
PRIORITY APPLN. INFO.: JP 1999-47571 A 19990225
WO 2000-JP1070 W 20000224

AB A novel human UDP-galactose:.beta.-N-acetylglucosamine .**beta**.**1,3-galactosyltransferase** (.beta.3Gal-T5) involved in synthesis of **sialyl Lewis** a sugar chain in colorectal cancer cells, is disclosed. The enzyme catalyzes the transfer of galactose moiety to N-acetylglucosamine (GlcNAc) residue at the non-reducing end of the sugar chain such as GlcNAc.beta.1-3Gal.beta.1-4Glc or GlcNAc monosaccharide. Recombinant expression of .beta.3Gal-T5 in microorganisms, animal cells, plant cells, insect cells, transgenic animals, or transgenic plants, is also claimed. A method for synthesis of complex carbohydrates (glycoconjugate) utilizing .beta.3Gal-T5 is claimed. A method of detg. the expression level of the gene encoding .beta.3Gal-T5 via hybridization method and modified oligonucleotide derivs. for the method, are also claimed. PCR-based method of detg. the expression level of the gene encoding .beta.3Gal-T5 is claimed. An antibody recognizing the polypeptide, a method for detecting and quantitating the polypeptide by using the antibody, immunostaining method and reagent contg. the antibody, are also claimed. A method for diagnosing cancer or cancer metastasis using the antibody is claimed. A method for screening a substance modulating the enzyme activity using the antibody, and for screening a substance regulating the expression of .beta.3Gal-T5 gene using the promoter and reporter gene, are claimed. A gene knockout animal, mouse in particular, is also claimed. The **sialyl Lewis** a antigen is a well known tumor marker, CA19-9, which is frequently elevated in the serum in gastrointestinal and pancreatic cancers. UDP-galactose:N-acetylglucosamine .**beta**.**1,3-galactosyltransferase**(s) (.beta.3Gal-Ts) are required for the synthesis of the **sialyl Lewis** a epitope. In the present study, a novel .beta.3Gal-T, named .beta.3Gal-T5, was isolated from a Colo205 **cDNA** library using a degenerate primer strategy based on the amino acid sequences of the four human .beta.3Gal-T genes cloned to date. Transfection expts. demonstrated that HCT-15 cells transfected with the .beta.3Gal-T5 gene expressed all the type 1 Lewis antigens. In gastrointestinal and pancreatic cancer cell lines, the amts. of .beta.3Gal-T5 transcripts were quite well correlated with the amts. of the **sialyl Lewis** a antigens. The .beta.1,3Gal-T activity toward agalacto-lacto-N-neotetraose was also well correlated with the amts. of .beta.3Gal-T5 transcripts in a series of cultured cancer cells, and in Namalwa and HCT-15 cells transfected with the .beta.3Gal-T5 gene. Thus, the .beta.3Gal-T5 gene is the most probable candidate responsible for the synthesis of the type 1 Lewis antigens in gastrointestinal and pancreatic epithelia and tumor cells derived therefrom. In addn., .beta.3Gal-T5 is a key enzyme that dets. the amts. of the type 1 Lewis antigens including the **sialyl Lewis** a antigen.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ACCESSION NUMBER: 1999:113635 USPATFULL
TITLE: Methods and products for the synthesis of oligosaccharide structures on glycoproteins, glycolipids, or as free molecules, and for the isolation of cloned genetic sequences that determine these structures
INVENTOR(S): Lowe, John B., Ann Arbor, MI, United States
PATENT ASSIGNEE(S): The Regents of the University of Michigan, Ann Arbor, MI, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5955347		19990921
APPLICATION INFO.:	US 1996-696731		19960814 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1995-393246, filed on 23 Feb 1995, now patented, Pat. No. US 5595900 which is a continuation of Ser. No. US 1994-220433, filed on 30 Mar 1994, now abandoned which is a division of Ser. No. US 1992-914281, filed on 20 Jul 1992, now patented, Pat. No. US 5324663 which is a continuation-in-part of Ser. No. US 1991-715900, filed on 19 Jun 1991, now abandoned which is a continuation-in-part of Ser. No. US 1990-627621, filed on 12 Dec 1990, now abandoned which is a continuation-in-part of Ser. No. US 1990-479858, filed on 14 Feb 1990, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Prouty, Rebecca E.
LEGAL REPRESENTATIVE: Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
NUMBER OF CLAIMS: 18
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 42 Drawing Figure(s); 43 Drawing Page(s)
LINE COUNT: 6161
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method for isolating a gene, comprising:

(i) isolating a cell possessing a post-translational characteristic of interest, said post-translational characteristic being the presence of a membrane-bound oligosaccharide or polysaccharide of interest on the surface of said cell, the presence of a soluble oligosaccharide or polysaccharide of interest in an extract of said cell, or the presence of a particularly glycosyltransferase activity in an extract of said cell;

(ii) creating a genetic library of either **cDNA** or genomic DNA from the genetic material of said isolated cell;

(iii) transforming host cells with said genetic library; and

(iv) screening said transformed host cells for a host cell containing said post-translational characteristic, thereby obtaining a cell containing said gene, is disclosed. The method can be used to obtain genes encoding glycosyltransferases.

L4 ANSWER 77 OF 83 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 2
ACCESSION NUMBER: 1999:315385 CAPLUS
DOCUMENT NUMBER: 131:127066
TITLE: Cloning, expression, and characterization of a novel UDP-galactose:.beta.-N-acetylglucosamine .**beta**.**1,3-galactosyltransferase** (.beta.3Gal-T5) responsible for synthesis of type 1 chain in colorectal and pancreatic epithelia and tumor cells derived therefrom
AUTHOR(S): Isshiki, Soichiro; Togayachi, Akira; Kudo, Takashi;

Nishihara, Shoko; Watanabe, Masahiko; Kubota, Tetsuro; Kitajima, Masaki; Shiraishi, Norihiko; Sasaki, Katsutoshi; Andoh, Toshiwo; Narimatsu, Hisashi

CORPORATE SOURCE: Division of Cell Biology, Institute of Life Science, Soka University, Tokyo, 192-8577, Japan

SOURCE: Journal of Biological Chemistry (1999), 274(18), 12499-12507
CODEN: JBCHA3; ISSN: 0021-9258

PUBLISHER: American Society for Biochemistry and Molecular Biology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The **sialyl Lewis** a antigen is a well known tumor marker, CA19-9, which is frequently elevated in the serum in gastrointestinal and pancreatic cancers. UDP-galactose:N-acetylglucosamine .**beta**.1,3-**galactosyltransferase**(s) (.beta.3Gal-Ts) are required for the synthesis of the **sialyl Lewis** a epitope. In the present study, a novel .beta.3Gal-T, named .beta.3Gal-T5, was isolated from a Colo205 **cDNA** library using a degenerate primer strategy based on the amino acid sequences of the four human .beta.3Gal-T genes cloned to date. Transfection expts. demonstrated that HCT-15 cells transfected with the .beta.3Gal-T5 gene expressed all the type 1 Lewis antigens. In gastrointestinal and pancreatic cancer cell lines, the amts. of .beta.3Gal-T5 transcripts were quite well correlated with the amts. of the **sialyl Lewis** a antigens. The .beta.1,3Gal-T activity toward agalacto-lacto-N-neotetraose was also well correlated with the amts. of .beta.3Gal-T5 transcripts in a series of cultured cancer cells, and in Namalwa and HCT-15 cells transfected with the .beta.3Gal-T5 gene. Thus, the .beta.3Gal-T5 gene is the most probable candidate responsible for the synthesis of the type 1 Lewis antigens in gastrointestinal and pancreatic epithelia and tumor cells derived therefrom. In addn., .beta.3Gal-T5 is a key enzyme that dets. the amts. of the type 1 Lewis antigens including the **sialyl Lewis** a antigen.

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 78 OF 83 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:360121 CAPLUS

DOCUMENT NUMBER: 131:168465

TITLE: Differential expression of .beta.1,3galactosyltransferases in human colon cells derived from adenocarcinomas or normal mucosal

AUTHOR(S): Bardoni, Anna; Valli, Maurizia; Trinchera, Marco

CORPORATE SOURCE: via Taramelli 3B, Department of Biochemistry, University of Pavia, Pavia, 27100, Italy

SOURCE: FEBS Letters (1999), 451(1), 75-80
CODEN: FEBLAL; ISSN: 0014-5793

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two .beta.1,3galactosyltransferases are detected in human colon cells: one corresponds to .beta.3GalT1, the other (.beta.3GalTx) is different from any cloned .beta.3GalT since in vitro it utilizes GlcNAc very efficiently under specific reaction conditions. Expression of .beta.3GalT1 transcript is high in normal colon mucosa and control neuroectodermal cells, which do not express **sialyl-Lewis** a antigen, and low in colon adenocarcinoma cells, as assessed by competitive RT-PCR. .beta.3GalTx activity is high in adenocarcinoma cells expressing **sialyl-Lewis** a and undetectable in all other cells, suggesting differential involvement and opposite regulation of such enzymes during carcinogenesis.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 79 OF 83 USPATFULL
ACCESSION NUMBER: 1998:72452 USPATFULL
TITLE: Methods and products for the synthesis of oligosaccharide structures on glycoproteins, glycolipids, or as free molecules, and for the isolation of cloned genetic sequences that determine these structures
INVENTOR(S): Lowe, John B., Ann Arbor, MI, United States
Legault, Daniel J., Ann Arbor, MI, United States
PATENT ASSIGNEE(S): The Regents of the University of Michigan, Ann Arbor, MI, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5770420		19980623
APPLICATION INFO.:	US 1995-525058		19950908 (8)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Wax, Robert A.
ASSISTANT EXAMINER: Hobbs, Lisa J.
LEGAL REPRESENTATIVE: Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
NUMBER OF CLAIMS: 26
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 38 Drawing Figure(s); 38 Drawing Page(s)
LINE COUNT: 7237
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A method for isolating a gene, comprising:

(i) isolating a cell possessing a post-translational characteristic of interest, said post-translational characteristic being the presence of a membrane-bound oligosaccharide or polysaccharide of interest on the surface of said cell, the presence of a soluble oligosaccharide or polysaccharide of interest in an extract of said cell, or the presence of a particularly glycosyltransferase activity in an extract of said cell;

(ii) creating a genetic library of either **cDNA** or genomic DNA from the genetic material of said isolated cell;

(iii) transforming host cells with said genetic library; and

(iv) screening said transformed host cells for a host cell containing said post-translational characteristic, thereby obtaining a cell containing said gene, is disclosed. The method can be used to obtain genes encoding glycosyltransferases.

L4 ANSWER 80 OF 83 USPATFULL
ACCESSION NUMBER: 97:5881 USPATFULL
TITLE: Methods and products for the synthesis of oligosaccharide structures on glycoproteins, glycolipids, or as free molecules, and for the isolation of cloned genetic sequences that determine these structures
INVENTOR(S): Lowe, John B., Ann Arbor, MI, United States
PATENT ASSIGNEE(S): The Regents of the University of Michigan, Ann Arbor, MI, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5595900		19970121
APPLICATION INFO.:	US 1995-393246		19950223 (8)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1994-220433, filed on 30

Mar 1994, now abandoned which is a division of Ser. No. US 1992-914281, filed on 20 Jul 1992, now patented, Pat. No. US 5324663 which is a continuation-in-part of Ser. No. US 1991-715900, filed on 19 Jun 1991, now abandoned which is a continuation-in-part of Ser. No. US 1990-627621, filed on 12 Dec 1990, now abandoned which is a continuation-in-part of Ser. No. US 1990-479858, filed on 14 Feb 1990, now abandoned

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Wax, Robert A.
ASSISTANT EXAMINER: Prouty, Rebecca
LEGAL REPRESENTATIVE: Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
NUMBER OF CLAIMS: 2
EXEMPLARY CLAIM: 2
NUMBER OF DRAWINGS: 43 Drawing Figure(s); 43 Drawing Page(s)
LINE COUNT: 5781
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method for isolating a gene, comprising:

(i) isolating a cell possessing a post-translational characteristic of interest, said post-translational characteristic being the presence of a membrane-bound oligosaccharide or polysaccharide of interest on the surface of said cell, the presence of a soluble oligosaccharide or polysaccharide of interest in an extract of said cell, or the presence of a particularly glycosyltransferase activity in an extract of said cell;

(ii) creating a genetic library of either **cDNA** or genomic DNA from the genetic material of said isolated cell;

(iii) transforming host cells with said genetic library; and

(iv) screening said transformed host cells for a host cell containing said post-translational characteristic, thereby obtaining a cell containing said gene, is disclosed. The method can be used to obtain genes encoding glycosyltransferases.

L4 ANSWER 81 OF 83 USPATFULL

ACCESSION NUMBER: 94:55482 USPATFULL
TITLE: Methods and products for the synthesis of oligosaccharide structures on glycoproteins, glycolipids, or as free molecules, and for the isolation of cloned genetic sequences that determine these structures
INVENTOR(S): Lowe, John B., Ann Arbor, MI, United States
PATENT ASSIGNEE(S): The Regents of the University of Michigan, Ann Arbor, MI, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5324663		19940628
APPLICATION INFO.:	US 1992-914281		19920720 (7)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1991-715900, filed on 19 Jun 1991, now abandoned which is a continuation-in-part of Ser. No. US 1990-627621, filed on 12 Dec 1990, now abandoned which is a continuation-in-part of Ser. No. US 1990-479858, filed on 14 Feb 1990, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Wax, Robert A.
ASSISTANT EXAMINER: Prouty, Rebecca
LEGAL REPRESENTATIVE: Oblon, Spivak, McClelland, Maier & Neustadt

NUMBER OF CLAIMS: 11
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 43 Drawing Figure(s); 43 Drawing Page(s)
LINE COUNT: 5605
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A method for isolating a gene, comprising:

(i) isolating a cell possessing a post-translational characteristic of interest, said post-translational characteristic being the presence of a membrane-bound oligosaccharide or polysaccharide of interest on the surface of said cell, the presence of a soluble oligosaccharide or polysaccharide of interest in an extract of said cell, or the presence of a particularly glycosyltransferase activity in an extract of said cell;

(ii) creating a genetic library of either **cDNA** or genomic DNA from the genetic material of said isolated cell;

(iii) transforming host cells with said genetic library; and

(iv) screening said transformed host cells for a host cell containing said post-translational characteristic, thereby obtaining a cell containing said gene, is disclosed. The method can be used to obtain genes encoding glycosyltransferases.

L4 ANSWER 82 OF 83 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 3
ACCESSION NUMBER: 1993:446467 CAPLUS
DOCUMENT NUMBER: 119:46467
TITLE: Mucin synthesis and secretion in various human epithelial cancer cell lines that express the MUC-1 mucin gene
AUTHOR(S): Dahiya, Rajvir; Kwak, Kyu Shik; Byrd, James C.; Ho, Samuel; Yoon, Wan Hee; Kim, Young S.
CORPORATE SOURCE: Dep. Med., Univ. California, San Francisco, CA, USA
SOURCE: Cancer Research (1993), 53(6), 1437-43
CODEN: CNREA8; ISSN: 0008-5472
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Previous studies have suggested that mucin gene expression is tissue-specific; however, the relationship between unique mucin gene products and the biochem. properties of mucins is unknown. The purpose of this study was to det. the biochem. and mol. characteristics of mucin synthesized by adenocarcinoma cell lines derived from breast (ZR-75-1), stomach (MGC-803), pancreas (Capan-2), and lung (Chago K-1). Mucin was quantitated by [3H]glucosamine labeling and Sepharose CL-4B chromatog. The mucinous nature of the labeled high mol. wt. glycoproteins (HMG) was verified by alk. borohydride treatment, cesium chloride d. gradient ultracentrifugation, and sodium dodecyl sulfate-polyacrylamide gel electrophoresis. Specific mucin gene expression was detd. using **cDNA** probes for 2 distinct intestinal mucins (MUC-2 and MUC-3) and one breast cancer mucin (MUC-1). Specific core mucin proteins were confirmed by immunoblots using antibodies that recognize MUC-1, MUC-2, and MUC-3 core peptides. These expts. demonstrate that all cell lines contained HMG in the medium, cytosol, and membrane fractions. The HMG was mucinous in breast, pancreatic, and lung cell lines. In contrast, most of the HMG secreted by the gastric cell line was proteoglycan-like, due to its susceptibility to hyaluronidase, heparinase, and chondroitinase avidin-biotin complex. Ion-exchange (DEAE-Sephacel) chromatog. of [3H]glucosamine-labeled HMG demonstrated that the acidic or basic nature of the mucin was different in all cancer cell lines tested. Despite these differences, mRNA and immunoblot anal. suggest that all cell lines predominantly express MUC-1 apomucin, small amts. of MUC-2 apomucin, and no MUC-3. Immunopptn. of MUC-1-type mucin using the 139H2 monoclonal antibody demonstrated that different sizes of mucin peptides were present

in all cell lines, corresponding to the known length polymorphism of this mucin. The amt. and nature of carbohydrate epitopes were analyzed by immunoblots using anti-T (peanut lectin), anti-Tn (91S8 monoclonal antibody), and antisialosyl Tn (JT10e monoclonal antibody). T and Tn antigens were significantly higher in breast and pancreatic cells as compared with lung and gastric cell lines. These findings correlated with increased activities of polypeptidyl N-acetylgalactosaminyl transferase and .**beta**.-**1,3-galactosyltransferase** . These expts. demonstrate that in contrast to **colon cancer** cell lines described previously, which expressed high levels of MUC-2 and MUC-3 mRNA, the mucin synthesized by breast, pancreatic, gastric, and lung cell lines is assocd. with high levels of MUC-1 mRNA, low levels of MUC-2 mRNA, and an absence of MUC-3 mRNA. However, the mucin in these cells differs greatly in amt., distribution, and biochem. and immunol. properties.

L4 ANSWER 83 OF 83 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 4
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DOCUMENT NUMBER: 116:171016
TITLE: Mucin synthesis and secretion in relation to spontaneous differentiation of **colon cancer** cells in vitro
AUTHOR(S): Niv, Yaron; Byrd, James C.; Ho, Samuel B.; Dahiya, Rajvir; Kim, Young S.
CORPORATE SOURCE: Gastrointest. Res. Lab., VA Med. Cent., San Francisco, CA, 94121, USA
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LANGUAGE: English

AB The synthesis and secretion of mucin-like high-mol. glycoprotein was studied in 2 human **colon cancer** cell lines that spontaneously differentiate in culture (Caco-2 and T84) and in 2 cell lines that do not spontaneously differentiate (LS174T and HT29). Mucin, quantitated by 3H-glucosamine labeling and chromatog. on Sepharose CL-4B, was produced by all 4 cell lines. The mucinous nature of the labeled high-mol. glycoprotein was verified by enzymic degrdn. treatments (heparinase, hyaluronidase, chondroitinase ABC, and N-glycanase), alk.-borohydride treatment, inhibition of labeling by the glycosylation inhibitor benzyl-.alpha.-GalNAc, and by CsCl-d.-gradient centrifugation. In all 4 cell lines, an inverse correlation of mucin synthesis with cell d. was demonstrated. In Caco-2 cells, the spontaneous post-confluent enterocytic differentiation with increased brush-border enzyme expression was assocd. with a decrease in mucin synthesis and in the activities of polypeptidyl GalNAc transferase and .**beta**.**1,3** -**galactosyltransferase** activity. Using **cDNA** probes for 2 distinct human intestinal mucins (MUC2 and MUC3), all 4 **colon cancer** cell lines expressed mucin message, but the types of mucin mRNA expressed differed. Thus, mucin-like glycoproteins can be synthesized by cell lines derived from non-mucinous **colon cancer**, whether or not they undergo spontaneous differentiation in culture. These cell lines may serve as in vitro models for studying apomucin heterogeneity and control of mucin gene expression.

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L6	beta ((1,3-galactosyltransferase/)!.CCLS.)	0	L6
L5	beta ((1,3-galactosyltransferase/)!.CCLS.)	0	L5
L4	L3 and (cDNA or clon$)	61	L4
L3	L1 and (sialyl-lewis or colon cancer)	61	L3
L2	L1 same (sialyl-lewis or colon cancer)	0	L2
L1	beta 1,3-galactosyltransferase	68	L1

END OF SEARCH HISTORY